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OIPE

RAW SEQUENCE LISTING

DATE: 04/24/2002

PATENT APPLICATION: US/10/067,122

TIME: 14:32:54

Input Set : N:\Crf3\RULE60\10067122.raw

Output Set: N:\CRF3\04242002\J067122.raw

2 -

1 <110> APPLICANT: Kwon, Byoung S.
 2 <120> TITLE OF INVENTION: MURINE 4-1BB GENE
 3 <130> FILE REFERENCE: 740.009US1
 4 <140> CURRENT APPLICATION NUMBER: 10/067,122
 C--> 5 <141> CURRENT FILING DATE: 2002-02-04
 7 <150> PRIOR APPLICATION NUMBER: 08/012,269
 8 <151> PRIOR FILING DATE: 1993-02-01
 10 <150> PRIOR APPLICATION NUMBER: US 07/922,996
 11 <151> PRIOR FILING DATE: 1992-07-30
 12 <150> PRIOR APPLICATION NUMBER: US 07/267,572
 13 <151> PRIOR FILING DATE: 1988-11-07
 14 <160> NUMBER OF SEQ ID NOS: 13
 15 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 17 <210> SEQ ID NO: 1
 18 <211> LENGTH: 2350
 19 <212> TYPE: DNA
 20 <213> ORGANISM: Mus musculus
 21 <220> FEATURE:
 22 <221> NAME/KEY: misc_feature
 23 <222> LOCATION: (1)...(2350)
 24 <223> OTHER INFORMATION: n = A,T,C or G
 25 <400> SEQUENCE: 1

26	atgtccatga actgctgagt ggataaacag cacgggatat ctctgtctaa aggaatatta	60
27	ctacaccagg aaaaggacac attcgacaac aggaaaggag cctgtcacag aaaaccacag	120
28	tgtcctgtgc atgtgacatt tcgccatggg aaacaactgt tacaacgtgg tggtcattgt	180
29	gctgctgcta gtgggctgtg agaagggtgg agccgtgcag aactcctgtg ataactgtca	240
30	gcctggtaact ttctgcagaa aatacaatcc agtctgcaag agctgccctc caagtacctt	300
31	ctccagcata ggtggacagc cgaactgtaa catctgcaga gtgtgtgcag gctatttcag	360
32	gttcaagaag ttttgctcct ctaccacaa cgcggagtgt gagtgcattg aaggattcca	420
33	ttgcttgagg ccacagtgcg ccagatgtga aaaggactgc aggcctggcc aggagctaac	480
34	gaagcagggg tgcaaaacct gtagcttggg aacatttaat gaccagaacg gtactggcgt	540
35	ctgtcgaccc tggacgaact gctctctaga cggaagggtc gtgcttaaga ccgggaccac	600
36	ggagaaggac gtggtgtgtg gacccctgtt ggtgagcttc tctccagta ccaccatttc	660
37	tgtgactcca gagggaggac caggagggca ctcttgacg gtccttacct tgttctctggc	720
38	gctgacatcg gctttgctgc tggccctgat cttcattact ctctgttct ctgtgctcaa	780
39	atggatcagg aaaaaattcc cccacatatt caagcaacca tttaagaaga ccaactggagc	840
40	agctcaagag gaagatgctt gtagctgccc atgtccacag gaagaagaag gaggaggagg	900
41	aggctatgag ctgtgatgta ctatcctagg agatgtgtgg gccgaaaccg agaagcacta	960
42	ggacccccacc atcctgtgga acagcacaag caacccccacc accctgttct tacacatcat	1020
43	cctagatgat gtgtgggcgc gcacctcatc caagtctctt ctaacgctaa catatttgtc	1080
44	tttacctttt ttaaatcttt ttttaaattt aaattttatg tgtgtgagtg ttttgccctgc	1140
45	ctgtatgcac acgtgtgtgt gtgtgtgtgt gtgacactcc tgatgcctga ggaggtcaga	1200
W--> 46	agagaaaggg ttggttccat aagaactgga gttatggatg gctgtgagcc ggnnngatag	1260

ENTERED

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```

47 gtcgggacgg agacctgtct tcttatttta acgtgactgt ataataaaaa aaaaatgata 1320
48 tttcgggaat tgtagagatt ctctgacac ccttctagtt aatgatctaa gaggaattgt 1380
49 tgatacgtag tatactgtat atgtgtatgt atatgtatat gtatatataa gactctttta 1440
50 ctgtcaaagt caacctagag tgtctgggta ccaggccaat tttattggac attttacgtc 1500
51 acacacacac acacacacac acacacacgt ttatactacg tactgtttatc ggtattctac 1560
52 gtcataataat gggatagggg aaaaggaaaac caaagagtga gtgatattat tgtggagggtg 1620
53 acagactacc ccttctgggt acgtagggac agacctcctt cggactgtct aaaactcccc 1680
54 ttagaagtct cgtcaagttc cgggacgaag aggacagagg agacacagtc cgaaaagtta 1740
55 tttttccggc aaatcctttc cctgtttcgt gacactccac cccttgtgga cacttgagtg 1800
56 tcaccttgc gccggaaggt caggtggtag ccgtctgtag gggcggggag acagagccgc 1860
57 gggggagcta cgagaatcga ctacacaggc gccccgggct tcgcaaatga aactttttta 1920
58 atctcacaag tttcgccgg gctcggcgga cctatggcgt cgatccttat taccttatcc 1980
59 tggcgccaag ataaaacaac caaaagcctt gactccggta ctaattctcc ctgccggccc 2040
60 ccgtaagcat aacgcggcga tctccacttt aagaacctgg ccgcgttctg cctgggtctcg 2100
61 ctttcgtaaa cggttcttac aaaagtaatt agttcttctg ttcagcctcc aagcttctgc 2160
62 tagtctatgg cagcatcaag gctgggtattt gctacggctg accgctacgc cgccgcaata 2220
63 aggggtactgg gcggcccgtc gaaggccctt tggtttcaga aaccaaggc cccctcata 2280
64 ccaacgttgc gactttgatt cttgccggta cgtggtggtg ggtgccttag ctctttctcg 2340
65 atagttagac 2350

```

67 <210> SEQ ID NO: 2

68 <211> LENGTH: 256

69 <212> TYPE: PRT

70 <213> ORGANISM: Mus musculus

71 <400> SEQUENCE: 2

```

72 Met Gly Asn Asn Cys Tyr Asn Val Val Val Ile Val Leu Leu Leu Val
73 1 5 10 15
74 Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn Cys Gln
75 20 25 30
76 Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Ser Cys Pro
77 35 40 45
78 Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn Cys Asn Ile Cys
79 50 55 60
80 Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser Thr
81 65 70 75 80
82 His Asn Ala Glu Cys Glu Cys Ile Glu Gly Phe His Cys Leu Gly Pro
83 85 90 95
84 Gln Cys Thr Arg Cys Glu Lys Asp Cys Arg Pro Gly Gln Glu Leu Thr
85 100 105 110
86 Lys Gln Gly Cys Lys Thr Cys Ser Leu Gly Thr Phe Asn Asp Gln Asn
87 115 120 125
88 Gly Thr Gly Val Cys Arg Pro Trp Thr Asn Cys Ser Leu Asp Gly Arg
89 130 135 140
90 Ser Val Leu Lys Thr Gly Thr Thr Glu Lys Asp Val Val Cys Gly Pro
91 145 150 155 160
92 Pro Val Val Ser Phe Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu
93 165 170 175
94 Gly Gly Pro Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala
95 180 185 190
96 Leu Thr Ser Ala Leu Leu Leu Ala Leu Ile Phe Ile Thr Leu Leu Phe

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```

97          195          200          205
98      Ser Val Leu Lys Trp Ile Arg Lys Lys Phe Pro His Ile Phe Lys Gln
99          210          215          220
100      Pro Phe Lys Lys Thr Thr Gly Ala Ala Gln Glu Glu Asp Ala Cys Ser
101          225          230          235          240
102      Cys Arg Cys Pro Gln Glu Glu Glu Gly Gly Gly Gly Gly Tyr Glu Leu
103          245          250          255
105 <210> SEQ ID NO: 3
106 <211> LENGTH: 24
107 <212> TYPE: PRT
108 <213> ORGANISM: Mus musculus
109 <400> SEQUENCE: 3
110      Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser
111          1          5          10          15
112      Thr His Asn Ala Glu Cys Glu Cys
113          20
115 <210> SEQ ID NO: 4
116 <211> LENGTH: 22
117 <212> TYPE: PRT
118 <213> ORGANISM: Drosophila
119 <400> SEQUENCE: 4
120      Cys Pro Val Cys Phe Asp Tyr Val Ile Leu Gln Cys Ser Ser Gly His
121          1          5          10          15
122      Leu Val Cys Val Ser Cys
123          20
125 <210> SEQ ID NO: 5
126 <211> LENGTH: 26
127 <212> TYPE: PRT
128 <213> ORGANISM: Dictyostelium
129 <400> SEQUENCE: 5
130      Cys Pro Ile Cys Phe Glu Phe Ile Tyr Lys Lys Gln Ile Tyr Gln Cys
131          1          5          10          15
132      Lys Ser Gly His His Ala Cys Lys Glu Cys
133          20          25
135 <210> SEQ ID NO: 6
136 <211> LENGTH: 6
137 <212> TYPE: PRT
138 <213> ORGANISM: Mus musculus
139 <220> FEATURE:
140 <221> NAME/KEY: SITE
141 <222> LOCATION: (1)...(6)
142 <223> OTHER INFORMATION: Xaa = Any Amino Acid
143 <400> SEQUENCE: 6
W--> 144      Val Gln Asn Ser Xaa Asp
145          1          5
147 <210> SEQ ID NO: 7
148 <211> LENGTH: 12
149 <212> TYPE: PRT
150 <213> ORGANISM: Artificial Sequence

```

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```

151 <220> FEATURE:
152 <223> OTHER INFORMATION: An artificial peptide
153 <400> SEQUENCE: 7
154      Cys Arg Pro Gly Gln Glu Leu Thr Lys Ser Gly Tyr
155      1          5          10
157 <210> SEQ ID NO: 8
158 <211> LENGTH: 24
159 <212> TYPE: PRT
160 <213> ORGANISM: Artificial Sequence
161 <220> FEATURE:
162 <223> OTHER INFORMATION: A conserved pattern
W--> 163 <221> NAME/KEY: SITE
164 <222> LOCATION: (1)...(24)
165 <223> OTHER INFORMATION: Xaa = Any Amino Acid
W--> 166 <400> 8
W--> 167      Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa
168      1          5          10          15
W--> 169      Xaa His Xaa Xaa Xaa Cys Xaa Cys
170      20
172 <210> SEQ ID NO: 9
173 <211> LENGTH: 4
174 <212> TYPE: PRT
175 <213> ORGANISM: Mus musculus
176 <400> SEQUENCE: 9
177      Cys Arg Cys Pro
178      1
180 <210> SEQ ID NO: 10
181 <211> LENGTH: 4
182 <212> TYPE: PRT
183 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: A consensus sequence
W--> 186 <221> NAME/KEY: SITE
187 <222> LOCATION: (1)...(4)
188 <223> OTHER INFORMATION: Xaa = Any Amino Acid
W--> 189 <400> 10
W--> 190      Cys Xaa Cys Pro
191      1
193 <210> SEQ ID NO: 11
194 <211> LENGTH: 25
195 <212> TYPE: DNA
196 <213> ORGANISM: Artificial Sequence
197 <220> FEATURE:
198 <223> OTHER INFORMATION: A primer
199 <400> SEQUENCE: 11
200      acctcgagggt cctgtgcatg tgaca
202 <210> SEQ ID NO: 12
203 <211> LENGTH: 25
204 <212> TYPE: DNA

```

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Output Set: N:\CRF3\04242002\J067122.raw

205 <213> ORGANISM: Artificial Sequence

206 <220> FEATURE:

207 <223> OTHER INFORMATION: A primer

208 <400> SEQUENCE: 12

209 atgaattcctt actgcaggag tgccc

25

211 <210> SEQ ID NO: 13

212 <211> LENGTH: 11

213 <212> TYPE: PRT

214 <213> ORGANISM: Mus musculus

215 <400> SEQUENCE: 13

216 Cys Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly

217 1 5 10

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/067,122

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 1253,1254,1255

Seq#:6; Xaa Pos. 5

Seq#:8; Xaa Pos. 2,3,5,6,7,8,9,10,11,12,13,15,16,17,19,20,21,23

Seq#:10; Xaa Pos. 2

VERIFICATION SUMMARY

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Input Set : N:\Crf3\RULE60\10067122.raw

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L:5 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:46 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:1200
L:144 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:163 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:166 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:8
L:167 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:16
L:186 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:189 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:10
L:190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0